

**ParaReading Handouts**  
**SERVES – October 2011**  
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## The Reading Brain

### ***Thalamus (1)***

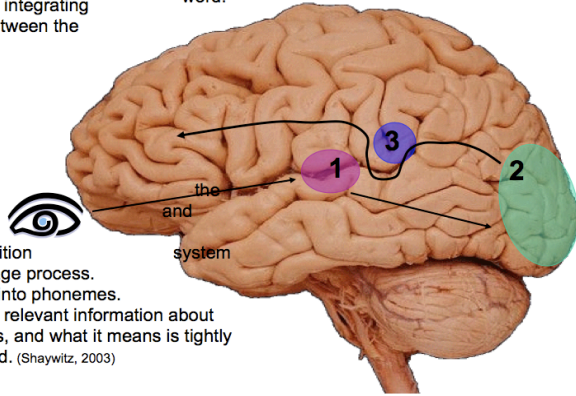
- Is sometimes called "gateway" to the cortex.
- Acts as a relay station, integrating sensory information between the senses and the cortex.

### ***Visual Cortex (2)***

- Located on the occipital lobes.
- Recognizes the visual pattern of a word.
- The brain has adapted a system that allows the visual cortex to process letter strings and other visual features.
- This string of letters has not been perceived as a word.

### ***Angular Gyrus (3)***

- Located at the junction of occipital, parietal, temporal lobes.
- Bridges the visual recognition and the rest of the language process.
- Translates written letters into phonemes.
- Is the "bulb" where all the relevant information about how a word looks, sounds, and what it means is tightly bound together and stored. (Shaywitz, 2003)



### ***Wernicke's Area (4)***

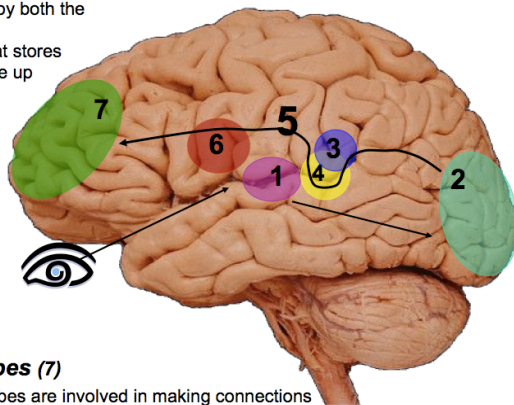
- Located at the junction of the parietal and temporal lobes.
- It is the semantic processing center that plays a significant role in the conscious comprehension of spoken words by both the listener and speaker.
- Contains a lexicon (dictionary) that stores memories of the sounds that make up words.

### ***Arcuate Fasciculus (5)***

- A bundle of nerve fibers that carry information from Wernicke's area to Broca's area.

### ***Broca's Area (6)***

- Located in the left hemisphere at the back of the frontal lobe.
- Controls the production of speech.
- Processes syntax; assembles words into sensible phrases that are grammatically correct.



### ***Frontal Lobes (7)***

- The frontal lobes are involved in making connections and judgments about what we read.

## Phoneme Awareness Tasks

Phoneme Awareness Task	Example
<b>Compare</b> or <b>match</b> sounds in words	Which word does not begin with /h/? hat, hair, wind, house
<b>Isolate</b> and <b>pronounce</b> separate speech sounds	Say the last sound in rice.
Put words together from their separate sounds ( <b>blending</b> ).	/sh/ /ou/ /t/ - Say it fast. (shout)
Break words apart into their component phonemes ( <b>segmentation</b> ).	Say the sounds in table. ( /t/ /a/ /b/ /l/ )
<b>Add, change, or delete</b> phonemes from words ( <b>phoneme manipulation</b> ).	Say heart. Change the /t/ to /d/. What's the new word? (hard)

## Phoneme Awareness Skills

Phonological Awareness	
<b>Repetition</b>	Of sentences, phrases, or words
<b>Word Identification</b>	Tracking or counting words in sentences
<b>Syllable Manipulation</b>	Counting (tapping), blending, segmenting by syllable or syllable substitution
<b>Onset-Rime Manipulation</b>	Combining or substituting onsets (consonant[s] before a vowel in a syllable) with rimes (the vowel and following consonants within a syllable)
<b>Rhyming and Alliteration</b>	Producing words that rhyme or words that follow an alliteration pattern
<b>Phoneme Awareness</b>	Matching, isolating, blending, segmenting, deleting, substituting phonemes



Bottom-up process

## Phonological Processing Continuum

### Phonemes

- The individual speech sounds that distinguish words.
- /s/ /m/ /a/ /t/ /b/ /e/ /t/

### Syllables

- Students need to segment and blend spoken syllables to remember, read and compare longer words.
- ac - com - plish - ment

### Onset and rime

- Recognition and production of rhyming words depends on the ability to break any syllable into two parts: the *onset* (the sound(s) that comes before the vowel) and the *rime* (the vowel and any consonants that follow it).
- sm - art    bl - ock    p - aste    eat

# Hart & Risley Meaningful Differences

[www.childrenofthecode.com](http://www.childrenofthecode.com)

Average Children	Children of Low-Language, Low-SES, Less Talkative Parents	Children of Talkative, College Educated, Professional Parents
From birth, hear an average of about <b>1500</b> words an hour addressed to them.		
Average 4-year old hears <b>30 million</b> words.	Heard <b>13 million</b> words by age 4.	Heard <b>48 million</b> words by age 4.
	Heard they were <b>right</b> about <b>120,000 times</b> .	Heard they were <b>right</b> about <b>750,000 times</b> .
	Heard they were <b>wrong</b> about 250,000 times.	Heard they were <b>wrong</b> about 120,000 times.
		The relationship between extra talk was related .78 to IQ.
		Extra talk before age 3 showed a .77 on PPVT at age 9, in the third grade.
		Vocabulary use at 3-years of age strongly relates to third grade comprehension scores.

## Beck's "Levels" of Vocabulary

### Level One - 'EVERYDAY WORDS'

Most students know these words.

- Basic, common vocabulary that children learn early (e.g., **sad, laugh, hot**).
- Important for high-risk learners and ELL students who know very little English.
- Critical to the comprehension of written material.

## Level Two - 'EXTENDED WORDS'

Focus on these for instruction.

- High-frequency, yet more sophisticated than basic words (e.g., **avoid, fortunate, industrious**).
- Can be applied to discussions across many contexts and experiences.
- Words for which students have a concept and can use a basic word to define (e.g., fortunate can be defined with “lucky”; industrious can be defined with “hardworking” or “busy”).
- Should be taught in depth.

## Level Three - 'EXPERT WORDS'

Briefly explain and keep moving.

- Low-frequency words, yet critical to understanding a specific domain.
- May be unique to certain topics or disciplines (e.g., **crochet, seam, bias**).
- Instruct these individual words when the need arises.

Predict	Apply Background Knowledge	Retell
<ul style="list-style-type: none"><li>• What will happen next?</li><li>• Look at the picture/title. What do you think the story will be about?</li></ul>	<ul style="list-style-type: none"><li>• Has that ever happened to you?</li><li>• Do you know anyone who has done this?</li><li>• Tell me about...</li></ul>	<ul style="list-style-type: none"><li>• What was the character doing?</li><li>• Tell me what happened in the story.</li><li>• Tell me two things you learned from what you just read.</li></ul>